UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/904,584 | 07/13/2001 | Mary Jeanne Kreck | 600-1-285 N | 2340 |

23565 7590 10/20/2004

KLAUBER & JACKSON
411 HACKENSACK AVENUE
HACKENSACK, NJ 07601

| EXAMINER | |
|---|---|
| LOCKARD, JON MCCLELLAND | |
| ART UNIT | PAPER NUMBER |
| 1647 | |

DATE MAILED: 10/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/904,584 | KREEK ET AL. | |
| | Examiner | Art Unit | |
| | Jon M Lockard | 1647 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *22 July 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *30-59* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *30-46,58 and 59* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *30-59* are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *05 August 2002*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election with traverse of Group I, claims 30-46 and 58-59, in the reply filed on 22 July 2004 is acknowledged. The traversal is on the ground(s) that the search for the nucleic acids of Group I would result in a search or related subject matter for the methods of Group II. This is not found persuasive.

2. As stated in the previous Office Action, mailed 21 June 2004, the nucleic acids of Invention I and the methods of Invention II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the polynucleotides can be used as probes in a method for determining the susceptibility in a subject to a physiological response and determining a therapeutically effective amount of agent to administer to an individual in response to said physiological response via screening for alleles of the human kappa opioid receptor gene, but they can also be used for recombinant production of the encoded protein, which is a materially different method.

3. The requirement is still deemed proper and is therefore made FINAL.

### Rejoinder Under Ochiai/Brouwer

4. The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and a product claim is subsequently found

allowable, withdrawn process claims that depend from or otherwise include all the limitations of the allowable product claim will be rejoined in accordance with the provisions of MPEP § 821.04. **Process claims that depend from or otherwise include all the limitations of the patentable product** will be entered as a matter of right if the amendment is presented prior to final rejection or allowance, whichever is earlier. Amendments submitted after final rejection are governed by 37 CFR 1.116; amendments submitted after allowance are governed by 37 CFR 1.312.

5. In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103, and 112. Until an elected product claim is found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowed product claim will not be rejoined. See "Guidance on Treatment of Product and Process Claims in light of *In re Ochiai, In re Brouwer* and 35 U.S.C. § 103(b)," 1184 O.G. 86 (March 26, 1996). Additionally, in order to retain the right to rejoinder in accordance with the above policy, Applicant is advised that the process claims should be amended during prosecution either to maintain dependency on the product claims or to otherwise include the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.**

***Priority***

6. Applicant's claim for domestic priority under 35 U.S.C. 119(e) is acknowledged.

***Information Disclosure Statement***

7. The information disclosure statement (IDS), filed 05 August 2002, has been considered by the Examiner.

***Drawings***

8. Applicants are advised that upon issuance of a patent, the complete text of the sequence listing submitted in compliance with 37 C.F.R.§§1.821-1.825 will be published as part of the patent. Therefore, it is unnecessarily redundant to repeat the sequence information in the form of Figures. Applicants should amend the specification to delete any Figures which consist only of nucleic acid or protein sequences which have been submitted in their entirety in computer readable format (i.e. as SEQ ID NO:'s) and should further amend the specification accordingly to reflect the replacement of the Figure by the appropriate SEQ ID NO:.

***Claim Rejections - 35 USC § 112, 2nd paragraph***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 30-46 and 58 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. Claims 30-46 and 58 are indefinite for reciting "a variant allele". Since an allele is a location on a chromosome, it is unclear if the claim is to be interpreted as something that has been isolated from a chromosome at the site normally occupied by the kappa opioid receptor gene, a naturally occurring variant of a kappa opioid receptor gene, or some other variant of a kappa opioid receptor gene. The term "variant allele" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

11. Claims 30-46 and 58 are further indefinite for reciting "a variant allele of a human kappa opioid receptor gene, comprising at least one variation in SEQ ID NO:1, wherein said variation comprises G36T, A843G, C846T, C852T, C948T, C1008T, or any combination thereof". While SEQ ID NO:1 is a human kappa opioid receptor, variants that have at least one variation in SEQ ID NO:1 may not be. Without knowing the upper limit of the number of variations that can be made to SEQ ID NO:1, the metes and bounds of the claim cannot be determined. Therefore suggested amendment to claim 30 to read "An isolated variant of a human kappa opioid receptor gene, comprising a DNA sequence consisting of SEQ ID NO:1, with one or more substitutions selected from the group consisting of G36T, A843G, C846T, C852T, C948T, and C1008T", would be remedial (See 112¶1 rejection below).

12. Claims 34-36, 37-40, 42-43, and 45-46 are indefinite as there is no limiting definition of "selectively hybridizable" in the specification, and the metes and bounds of that which will hybridize are dependent upon the conditions under which the hybridization is performed. The discussion of such at page 20 of the specification is noted but vague, fails to breathe life and meaning into the term, is exemplary rather than limiting, and thus is insufficient to render the

claims definite. Furthermore, given the 112¶2 rejection over claim 30 *supra*, the metes and bounds of that which will hybridize to an undefined sequence cannot be determined.

13. The term "derivatives" in claim 39 is a relative term which renders the claim indefinite. The term "derivatives" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Therefor, one of ordinary skill in the art would not know what is encompassed by "derivatives" of pUC plasmids.

14. Claim 39 is further indefinite because it is unclear what is meant by the term "E. coli", since E. coli is not a vector.

15. Claim 39 is further rejected as being indefinite for reciting the phrase "wherein said cloning vector comprises of". Since comprises is open language, the claim reads a cloning vector containing multiple vectors, such as "bacteriophages" and "plasmids", for example. Therefore suggested amendment to claim 39 to read "The cloning vector of either of claims 37 or 38, wherein said cloning vector is selected from the group consisting of bacteriophages, plasmids, or pUC plasmids", would be remedial. **Claims 40, 43, and 46 are similarly indefinite.** See MPEP §2173.05(h) for proper Markush language.

16. Claims 41 and 42 recite the limitation "the isolated variant allele" in line 1 of the claims. There is insufficient antecedent basis for this limitation in the claims. Claim 30, from which claims 41 and 42 depend, does not recite an "isolated variant allele".

17. Claim 58 is rejected as being indefinite because it is unclear what is meant by the following terms or phrases: "A commercial test kit may for determining...", a "gene of an allele", or a "bodily sample".

18. Claim 58 is further considered indefinite because a kit, by definition, must contain 2 or more elements and the interrelationships between the elements must be explicitly stated (see In re Venezia 530 F.2d 956 CCPA 1975). In the instant case, the relationship between the primers is not specified, and the relationship between the primers and reagents is not specified. Furthermore, the terms "primers" and "other reagents" are relative terms which render the claim indefinite. The terms "primers" and "other reagents" are not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree of the number of primers, or the number of different types of reagents and what they are specifically, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

19. Claims 30 and 59 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 30 and 59 are drawn to a variant allele of a human kappa opioid receptor gene (claim 30) and a nucleic acid as set forth in SEQ ID NO:1 (claim 59), all of which are unaltered, naturally occurring compounds. Thus, they are not articles of "manufacture". These rejections may be obviated by amending the claims to read "an isolated variant allele…", and "an isolated nucleic acid as set forth in SEQ ID NO:1", so long as there is support for the amendment in the specification. Applicants are advised when they amend claim 30 to avoid making it duplicative of claim 31.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

20. Claims 30-46 are rejected under 35 USC 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

21. The specification discloses a human kappa opioid receptor gene set forth as SEQ ID NO:1. However, Claim 30, from which claims 31-46 depend, recites "a variant allele of a human kappa opioid receptor gene comprising a DNA sequence having at least one variation in SEQ ID NO:1, wherein said variation comprises G36T, A843G, C846T, C852T, C948T, or C1008T, or any combination thereof". The language of the claim does not set forth **(a)** any upper limit of the number of variations that can be made to SEQ ID NO:1, **(b)** any limit to what substitutions or other variations can be made, or **(c)** any requirement for conserved structure or function. Claims 34-36, 37-40, 42-43, and 45-46 recite a nucleic acid molecule "selectively hybridizable" to the "variant allele" of claim 31. The claims do not require that the nucleic acids possess any particular biological activity, nor any particular conserved structure, or other disclosed distinguishing feature. Thus, the claims are drawn to a genus of DNA molecules.

22. To provide adequate written description and evidence of possession of a claimed genus, the specification must provide sufficient distinguishing identifying characteristics of the genus. The factors to be considered include disclosure of complete or partial structure, physical and/or chemical properties, functional characteristics, structure/function correlation, methods of making the claimed product, and any combination thereof. In this case, the only factor present in the claims is a partial structure in the form of "having at least one variation in SEQ ID NO:1" with at least one of the six substitutions present. Furthermore, the only factor present in claims 34-36, 38-40, 42-43, and 45-46 is a mere chemical property of the DNA in the form of a recitation of "selectively hybridizable" to the "variant allele" of claim 31. The specification does not identify any particular portion of the structure that must be conserved, nor does it provided any disclosure of a particular structure/function correlation or biological activity. The distinguishing characteristics of the claimed genus are not described. The only adequately described species is a polynucleotide represented by SEQ ID NO:1. Accordingly, the specification does not provide adequate written description of the claimed genus.

23. *Vas-Cath Inc. v. Mahurkar*, 19USPQ2d 1111, clearly states that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession *of the invention*. The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed.*" (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See *Vas-Cath* at page 1116).

24. With the exception of the sequences referred to above, the skilled artisan cannot envision the detailed chemical structure of the encompassed DNA molecules, and therefore conception is

not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method of isolating it. The nucleic acid itself is required. See *Fiers v. Revel*, 25 USPQ2d 1601 at 1606 (CAFC 1993) and *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.*, 18 USPQ2d 1016.

25. One cannot describe what one has not conceived. See *Fiddes v. Baird*, 30 USPQ2d 1481 at 1483. In *Fiddes*, claims directed to mammalian FGF's were found to be unpatentable due to lack of written description for that broad class. The specification provided only the bovine sequence.

26. Therefore, only the DNA of SEQ ID NOs:1-7, but not the full breadth of the claims meet the written description provision of 35 U.S.C. §112, first paragraph. Applicant is reminded that *Vas-Cath* makes clear that the written description provision of 35 U.S.C. §112 is severable from its enablement provision (see page 1115).

27. Claims 30-46 are also rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

28. Claim 30, from which claims 31-46 depend, recites "a variant allele of a human kappa opioid receptor gene comprising a DNA sequence having at least one variation in SEQ ID NO:1, wherein said variation comprises G36T, A843G, C846T, C852T, C948T, or C1008T, or any combination thereof". The language of the claim does not set forth **(a)** any limit to the upper

limit of the number of variations that can be made to SEQ ID NO:1, **(b)** any limit to what substitutions can be made, or **(c)** any requirement for conserved structure or function. Claims 34-36, 37-40, 42-43, and 45-46 recite a nucleic acid molecule "selectively hybridizable" to the "variant allele" of claim 31. However, other than the nucleic acid of SEQ ID NO:1, the disclosure fails to provide sufficient guidance and information regarding the structural and functional requirements commensurate in scope with what is encompassed by the instant claims. The disclosure has not shown (1) which portions of SEQ ID NO:1 are critical to the activity of the protein encoded by it; (2) what and how many substitutions one can make to SEQ ID NO:1 that will result in a protein with the same activity as the protein encoded by SEQ ID NO:1; and (3) any guidance on how to use proteins that are encoded by SEQ ID NO:1 which would, based on the language of said claims, encompass both active and inactive variants of the protein encoded by SEQ ID NO:1. The state of the art is such that the relationship between the sequence of a protein and its activity is not well understood and unpredictable, and that certain positions in the sequence are critical to the protein's structure/function relationship and can only tolerate only relatively conservative substitutions or no substitutions (See Wells, 1990, Biochemistry 29:8509-8517; Ngo et al., The Protein Folding Problem and Tertiary Structure Prediction, 1994, pp. 492-495). Furthermore, it has been demonstrated that several specific domains of the opioid receptors are critically involved in ligand binding (affinity and selectivity), G protein coupling efficiency and constitutive activity, and receptor desensitization, endocytosis, and downregulation (Reviewed in Waldhoer et al., 2004, Annual Review of Biochemistry, pp. 962-966).

29. Due to the large quantity of experimentation necessary to generate the infinite number of variants recited in the claims, the lack of direction/guidance presented in the specification regarding which structural features are required in order to provide activity, the absence of working examples directed to the same, the complex nature of the invention, the state of the prior art which establishes the unpredictability of the effects of substitutions/deletions on protein structure and function, and the breadth of the claims which fail to recite any structural or functional limitations, undue experimentation would be required of the skilled artisan to make and/or use the claimed invention in its full scope..

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

30. Claims 30-46 and 58 are rejected under 35 U.S.C. 102(e) as being anticipated by Bell et al. (U.S. Patent NO. 6,096,513, priority date 5 November 1993).

31. Applicant is advised that in view of the 112(2) rejection *supra,* the Examiner is interpreting the claimed subject matter to read on a human DNA sequence having at least one variation in SEQ ID NO:1, wherein in the variation includes, but is not limited to, G36T, A843G, C846T, C852T, C948T, or C1008T or any combination thereof.

32. Bell et al. teach an isolated nucleic acid (SEQ ID NO:1) that encodes a mammalian kappa opioid receptor gene (See Column 13, lines 1-12) as well as nucleic acids that hybridize to SEQ ID NO:1 (See Column 6, lines 5-16 and Column 13, lines 1-12). SEQ ID NO:1 of Bell et al. encodes a human kappa opioid receptor that has 86.8% sequence identity with SEQ ID NO:1 of the Instant Application and has a "T" substituted for a "C" at the position corresponding to nucleotide 948 of SEQ ID NO:1 of the Instant Application (See attached sequence alignment). Bell et al. further teach nucleic acids (SEQ ID NO:1 as well as nucleic acids hybridizable to the same) that are detectably labeled with radioactive or enzymatic labels (See Column 13, lines 45-50). Bell et al. teach nucleic acids (SEQ ID NO:1 as well as nucleic acids hybridizable to the same) cloned into a pBR322 vector (See Column 22, lines 9-13) which comprises an origin of replication. Bell et al. also teach nucleic acids (SEQ ID NO:1 as well as nucleic acids hybridizable to the same) cloned into a pCMV vector, that comprises an immediate early promoter of hCMV (See Column 18, line 57 – Column 20, line 30), for transforming/transfecting COS-1 cells (See Column 7, lines 18-19) and CHO cells (See Column 20, lines 31-50). Lastly, Bell et al. teach diagnostic assay kits for detecting the presence, in a biological sample, of the polynucleotide of SEQ ID NO:1 that encodes an opioid receptor polypeptide, and which has a "T" substituted for a "C" at position 948 of SEQ ID NO:1 of the Instant Application (See Column 8, lines 10-15). Applicants are advised that the limitation "directions for use of the kit"

in part (c) of claim 58 has not been given patentable weight (See In re: Ngai 70 USPQ2d 1862, 13 May 2004). Applicants are also advised that the wording of claim 58 does not include language that would result in the detection of a specific mutation, but reads on primers that would amplify any segment of SEQ ID NO:1 that comprises one or more of nucleotides 36, 843, 846, 852, 948, or 1008. Applicants are further advised that should the claim be amended so that a specific mutation is detected, the claim would be rejected under 35 U.S.C. §101 since Applicants have not disclosed a specific or substantial utility for such a kit (i.e., the Applicants have not disclosed a specific medical or pathological condition associated with said variant allele that would make such a kit useful).

33. Thus, Bell et al. anticipate the limitations of claims 30-46 and 58.

34. Claims 30-31, 37, 39, 41, 43-44, 46, and 58 are rejected under 35 U.S.C. 102(b) as being anticipated by Mansson et al. (Biochemical and Biophysical Research Communications 202(3):1431-1437, 1994).

35. Applicant is advised that in view of the 112(2) rejection *supra,* the Examiner is interpreting the claimed subject matter to read on a human DNA sequence having at least one variation in SEQ ID NO:1, wherein in the variation includes, but is not limited to, G36T, A843G, C846T, C852T, C948T, or C1008T or any combination thereof.

36. Mansson et al. (cited by Applicants, Reference CA) teach an isolated nucleic acid (GenBank Accession No. U11053) that encodes a human kappa opioid receptor gene as well as its deduced amino acid sequence (See page 1434, Figure 1). The cDNA of Mansson et al. has 99.6% sequence identity with SEQ ID NO:1 of the Instant Application and has a "T" substituted

for a "G" at position 36, a "G" substituted for an "A" at position 843, and a "T" substituted for a "C" at position 846 of SEQ ID NO:1 of the Instant Application (See attached sequence alignment). Mansson et al. teach that this cDNA was cloned into a Bluescript-SK vector (See page 1432, ¶2-3) which comprises an origin of replication. Mansson et al. also teach that this cDNA was cloned into a pcDNA3 vector for transfecting COS-7 cells (See page 1432, ¶4). Although Mansson et al. are silent with regards to the cDNA operably linked to an immediate early promoter of hCMV, the Examiner notes that the pcDNA3 vector comprises an immediate early promoter of hCMV, and thus the cDNA cloned into the pcDNA3 vector would be operably linked to the immediate early promoter of hCMV (See attached catalog description of pcDNA3 vector). Lastly, Mansson et al. teach primers and a RT/PCR kit that was used for obtaining the kappa opioid receptor cDNA from human placenta, wherein the cDNA has a "T" substituted for a "G" at position 36, a "G" substituted for an "A" at position 843, and a "T" substituted for a "C" at position 846 of SEQ ID NO:1 of the Instant Application. Applicants are advised that the limitation "directions for use of the kit" in part (c) of claim 58 has not been given patentable weight (See In re: Ngai 03-1524). Applicants are also advised that the wording of claim 58 does not include language that would result in the detection of a specific mutation, but reads primers that would amplify any segment of SEQ ID NO:1 that comprises nucleotides 36-1008. Applicants are further advised that should the claim be amended so that a specific mutation is detected, the claim would be rejected under 35 U.S.C. §101 since Applicants have not disclosed a specific or substantial utility for such a kit (i.e., the Applicants have not disclosed a specific medical or pathological condition associated with said variant allele that would make such a kit useful).

37. Thus, Mansson et al. anticipate the limitations of claims 30-31, 37, 39, 41, 43-44, 46, and 58.

38. Claims 58 and 59 are rejected under 35 U.S.C. 102(b) as being anticipated by Simonin et al. (Proc. Natl. Acad. Sci. USA 92:7006-7010, 1995).

39. Simonin et al. (cited by Applicants, Reference CB) teach an isolated nucleic acid (GenBank Accession No. U17298, cited by Applicants, Reference CF) that encodes a human kappa opioid receptor gene as well as its deduced amino acid sequence (See page 7008, Figure 2). The cDNA of Simonin et al. has 100% sequence identity with SEQ ID NO:1 of the Instant Application. Lastly, Mansson et al. teach primers that were used for obtaining the kappa opioid receptor cDNA from human placenta. Since these primers were used to amplify the entire length of SEQ ID NO:1 of the Instant Application, they could be used to identify, by way of sequencing, variants at positions 36, 843, 846, 852, 948, and 1008. Applicants are advised that the limitation "directions for use of the kit" in part (c) of claim 58 has not been given patentable weight (See In re: Ngai 03-1524). Applicants are also advised that the wording of claim 58 does not include language that would result in the detection of a specific mutation, but reads on primers that would amplify any segment of SEQ ID NO:1 that comprises nucleotides 36-1008. Applicants are further advised that should the claim be amended so that a specific mutation is detected, the claim would be rejected under 35 U.S.C. §101 since Applicants have not disclosed a specific or substantial utility for such a kit (i.e., the Applicants have not disclosed a specific medical or pathological condition associated with said variant allele that would make such a kit useful).

40. Thus, Simonin et al. anticipate the limitations of claims 58 and 59.

***Summary***

41. No claim is allowed.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jon M. Lockard, Ph.D.** whose telephone number is **(571) 272-2717**. The examiner can normally be reached on Monday through Friday, 8:00 AM to 6:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Brenda Brumback, Ph.D.** can be reached on **(571) 272-0961**.

The fax number for the organization where this application or proceeding is assigned is **703-872-9306**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see **http://pair-direct.uspto.gov**. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866-217-9197** (toll-free).

JML
October 15, 2004

Lorraine Spector

LORRAINE SPECTOR
PRIMARY EXAMINER